

I CLAIM:

1. A fault-current-limiting circuit to be used in combination with a poly-phase circuit, said poly-phase circuit comprising:

a plurality of inductive windings;

each of said windings having a first terminal connected to a common point;

at least one of said windings having a second terminal connected to an electrical load;

said fault-current-limiting circuit comprising:

a first electrical path between said common point and ground comprising:

a current-limiting device having a first state whereat current passes through said device; and a second state whereat current substantially does not pass through said device and wherein said device switches from said first state to said second state when current through said device exceeds a pre-determined maximum;

a second electrical path between said common point and ground having an electrical resistance significantly greater than a resistance of said first path when said device is in said first state.

2. The fault-current-limiting circuit of claim 1, wherein said current-limiting device is one of a fuse and a circuit breaker.

3. The fault-current-limiting circuit of claim 2, wherein said one of said fuse and said circuit breaker is connected to said common point and ground.

4. The fault-current-limiting circuit of claim 3, wherein said second electrical path comprises a resistor connected in parallel with said one of said fuse and said circuit breaker.

5. The fault-current-limiting device as claimed in claim 3, wherein said pre-determined maximum current is chosen a percentage of steady-state load current.

6. The fault-current-limiting circuit of claim 4, wherein said poly-phase circuit is a three-phased circuit.

7. The fault-current-limiting circuit of claim 5, wherein said pre-determined maximum current is at least ten percent of a steady-state load current passing through one of said windings.

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8. A fault-current-limiting circuit to be used in combination with a poly-phase circuit, said poly-phase circuit comprising:

a plurality of inductive windings;

each of said windings having a first terminal connected to a common point;

at least one of said windings having a second terminal connected to an electrical load;

said fault-current-limiting circuit comprising:

first electrical connection means between said common point and said ground point;

said first electrical connection means comprising

an actuatable current-limiting means having a first and second state

wherein current passes through said current limiting means in said first state and wherein current does not pass through said current limiting means in said second state;

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actuating means to switch said current limiting means from said first state to said second state when current through said current switching means exceeds a pre-determined maximum;

second electrical connection means between said common point and ground having an electrical impedance significantly greater than an electrical impedance of said first electrical connection means when said current-limiting means is in said first state.

9. The fault-current-limiting circuit of claim 8, wherein said polyphase circuit is a three-phased circuit.

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10. The fault-current-limiting circuit of claim 9, wherein said current limiting means ~~and~~
~~said actuating means~~ comprise one of a fuse and a circuit breaker.

11. The fault-current-limiting circuit of claim 10, wherein said second electrical connection means comprises a resistor connected to said common point and ground.

12. The fault-current-limiting circuit of claim 11, wherein said one of said fuse and said circuit breaker is connected in parallel with said resistor.

13. The fault-current-limiting circuit of claim 12 wherein said pre-determined maximum is a current in excess of ten percent of steady-state current through one of said windings.

14. The fault-current-limiting circuit of claim 1, further comprising an alarm in communication with one of said first and second path, adapted to sense when said current limiting device is in said second state and generate a signal when said current limiting device

is in said second state.

15. The fault-current-limiting circuit of claim 14, wherein said signal is one of an audible and visual signal.

16. The fault-current-limiting circuit of claim 8 further comprising an alarm in communication with one of said first and second electrical connection means, adapted to sense when said current limiting means is in said second state and generate a signal when said current limiting device is in said second state.

17. The fault-current-limiting circuit of claim 16, wherein said signal is one of an audible and visual signal.